

WHAT IS CLAIMED IS:

1. A sound control apparatus provided in a portable terminal for sounding a music tone in association with operation of the portable terminal, comprising:

a storage section that stores music information representing a music tone and configuration information associated to a timbre of the music tone;

an information acquiring section that acquires the music information and the configuration information from the storage section; and

a tone generating section that is configured by the acquired configuration information to create a timbre specified by the configuration information, and that operates according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre.

2. The sound control apparatus according to claim 1, wherein the storage section has a limited capacity such as to store the music information in a compact format which is downsized from a non-compact format of the music information before storage of the music information.

3. The sound control apparatus according to claim 2, wherein the storage section stores the music information in

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a compact format which is downsized from a non-compact format of a standard MIDI file.

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4. The sound control apparatus according to claim 1, wherein the storage section stores the music information and the configuration information, which are downloaded from a base station having a database of the music information and the configuration information.

5. The sound control apparatus according to claim 1, wherein the storage section stores the music information and the configuration information, which are retrieved from a personal computer having a source of the music information and the configuration information.

6. The sound control apparatus according to claim 1, wherein the storage section stores the music information and the configuration information, which are transmitted from another portable terminal.

7. The sound control apparatus according to claim 1, wherein the storage section stores the music information and the configuration information, which are loaded from a memory medium attachable to the portable terminal.

8. The sound control apparatus according to claim 1, wherein the tone generating section is configured to create different timbres and is operated to concurrently generate a plurality of music tones having the different timbres.

9. The sound control apparatus according to claim 1, further comprising a connector that is detachably connectable to a memory medium memorizing the music information and the configuration information.

10. The sound control apparatus according to claim 1, wherein the portable terminal has an audio controller for controlling a talking voice exchanged during the operation of telecommunication, the sound control apparatus further comprising a mixer that mixes the talking voice passed from the audio controller and the music tone generated by the tone generator section with each other.

11. A sound control apparatus provided in a portable terminal for sounding a music tone in association with operation of the portable terminal, comprising:

a storage section that stores music information representing a music tone and configuration information associated to a timbre and an effect of the music tone;

an information acquiring section that acquires the music information and the configuration information from the storage section;

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a tone generating section that is configured by the acquired configuration information to create a timbre specified by the configuration information, and that operates according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre; and

an effector section that is configured by the configuration information for applying an effect specified by the configuration information to the generated music tone.

12. A sound control apparatus provided in a portable terminal for sounding a music tone in association with operation of the portable terminal, which is executed by a first processor, the sound control apparatus comprising:

a memory that memorizes music information representing a music tone and configuration information associated to a timbre of the music tone;

an information acquiring section that acquires the music information and the configuration information from the memory;

a tone generating section that is configured by the acquired configuration information to create a timbre

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specified by the configuration information, and that operates according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre; and

a second processor provided separately from the first processor for controlling the memory, the information acquiring section and the tone generating section.

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13. The sound control apparatus according to claim 12, wherein the first processor comprises a main CPU of the portable terminal, and the second processor comprises a dedicated CPU for processing the music information and the configuration information.

14. The sound control apparatus according to claim 12, wherein the portable terminal has a system bus, the sound control apparatus further comprising a communication interface connectable to the system bus such that the memory can receive the music information transmitted from an external source through the system bus and the communication interface.

15. The sound control apparatus according to claim 12, wherein the portable terminal has input controls for inputting a command, the sound control apparatus further comprises an edit section operative according to the

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command from the input controls for editing the music information stored in the memory.

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16. The sound control apparatus according to claim 12, wherein the portable terminal has an audio controller for controlling a talking voice exchanged during the operation of telecommunication, the sound control apparatus further comprising a communication interface connectable to the audio controller for receiving the talking voice so that the second processor can process the talking voice.

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17. The sound control apparatus according to claim 16, wherein the second processor can process the talking voice to apply thereto a desired acoustic effect.

18. The sound control apparatus according to claim 16, wherein the second processor can process the talking voice to modify a pitch and a timbre of the talking voice.

19. The sound control apparatus according to claim 12, further comprising a timer for periodically generating a timing signal effective to control a generating timing of the music tone so as to determine a performance tempo of the generated music tone, the timing signal being manually settable to control the performance tempo.

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20. The sound control apparatus according to claim 12,
further comprising another memory for storing a conversion
table used for converting a format of the music
information.

21. The sound control apparatus according to claim 12,
further comprising another memory for storing a compression
table used for compressing the music information stored in
the memory.

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22. The sound control apparatus according to claim 12,
wherein the portable terminal has an audio controller for
controlling a talking voice exchanged during the operation
of telecommunication, the sound control apparatus further
comprising a communication interface connectable to the
audio controller, and a mixer that mixes the talking voice
passed from the audio controller through the communication
interface with the music tone generated by the tone
generator section.

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23. The sound control apparatus according to claim 12,
wherein the memory has a limited capacity such as to store
the music information in a compact format which is
downsized from a non-compact format of the music
information before storage of the music information.

24. The sound control apparatus according to claim 23, wherein the memory stores the music information in a compact format which is downsized from a non-compact format of a standard MIDI file.

25. The sound control apparatus according to claim 12, wherein the memory stores the music information and the configuration information, which are downloaded from a base station having a database of the music information and the configuration information.

26. The sound control apparatus according to claim 12, wherein the memory stores the music information and the configuration information, which are retrieved from a personal computer having a source of the music information and the configuration information.

27. The sound control apparatus according to claim 12, wherein the memory stores the music information and the configuration information, which are transmitted from another portable terminal.

28. The sound control apparatus according to claim 12, wherein the memory stores the music information and the configuration information, which are loaded from a recording medium attachable to the portable terminal.

29. The sound control apparatus according to claim 12,
wherein the tone generating section is configured to create
different timbres and is operated to concurrently generate
a plurality of music tones having the different timbres.

30. A sound control apparatus provided in a portable
terminal for sounding a music tone in association with
operation of the portable terminal, which is executed by a
first processor, the sound control apparatus comprising:

a memory that memorizes music information representing
a music tone and configuration information associated to a
timbre and an effect of the music tone;

an information acquiring section that acquires the
music information and the configuration information from
the memory;

a tone generating section that is configured by the
acquired configuration information to create a timbre and
an effect specified by the configuration information, and
that operates according to the acquired music information
to generate the music tone being represented by the music
information and having the specified timbre and the effect;
and

a second processor provided separately from the first
processor for controlling the memory, the information
acquiring section and the tone generating section.

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31. The sound control apparatus according to claim 30, wherein the portable terminal has an audio controller for controlling a talking voice exchanged during the operation of telecommunication, the sound control apparatus further comprising a communication interface connectable to the audio controller, an effector that applies the effect applied to the music tone according to the configuration information and applies an effect to the talking voice received from the audio controller through the communication interface, and a mixer that mixes the talking voice applied with the effect and the music tone also applied with the effect.

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32. A portable terminal apparatus comprising:

- a communication device that transmits and receives various information;
- a memory that stores various information including music information representative of a music tone, configuration information associated to a timbre of the music tone, and voice information representative of a speech voice;
- a sound control device that is configured according to the configuration information for generating the music tone according to the music information with the timbre specified by the configuration information; and

an audio device that processes the voice information stored in the memory for reproducing the speech voice represented by the voice information.

33. The portable terminal apparatus according to claim 32, wherein the memory has a limited capacity such as to store the music information in a compact format which is downsized from a non-compact format of the music information before storage of the music information.

34. The portable terminal apparatus according to claim 33, wherein the memory stores the music information in a compact format which is downsized from a non-compact format of a standard MIDI file.

35. A portable terminal apparatus comprising:

a communication device that transmits and receives various information;

a memory that stores various information including music information representative of a music tone, configuration information associated to a timbre of the music tone, and picture information representative of a visual image;

a sound control device that is configured according to the configuration information for generating the music tone

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according to the music information with the timbre
specified by the configuration information; and

a video device that processes the picture information
stored in the memory for reproducing the visual image
represented by the picture information.

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36. The portable terminal apparatus according to claim 35,
wherein the memory has a limited capacity such as to store
the music information in a compact format which is
downsized from a non-compact format of the music
information before storage of the music information.

37. The portable terminal apparatus according to claim 35,
wherein the memory stores the music information in a
compact format which is downsized from a non-compact format
of a standard MIDI file.

38. A portable terminal apparatus comprising:

a communication device that transmits and receives
various information;

a memory that stores various information including
music information representative of a music tone,
configuration information associated to a timbre and an
effect of the music tone, voice information representative
of a speech voice, and picture information representative
of a visual image;

a sound control device that is configured according to the configuration information for generating the music tone according to the music information with the timbre and the effect specified by the configuration information;

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an audio device that processes the voice information stored in the memory for reproducing the speech voice represented by the voice information; and

a video device that processes the picture information stored in the memory for reproducing the visual image represented by the picture information.

39. A system designed for dealing with music information, and comprised of a portable terminal having a capability of generating a music tone and a base station having a source of music information, wherein

the base station comprises:

a selecting section that selects music information from the source in response to request information transmitted from the portable terminal,

a setting section that sets the selected music information by configuration information effective to specify a timbre of a music tone determined by the selected music information; and

a transmitting section that transmits the selected music information together with the configuration information to the portable terminal, and wherein

the portable terminal comprises:

a memory that stores the music information transmitted from the base station, and

a tone generating section that is configured by the configuration information transmitted from the base station and that operates based on the transmitted music information to generate the music tone having the specified timbre.

40. The system according to claim 39, wherein the base station includes a charging section that charges the portable terminal for delivery of the selected the music information to the portable terminal.

41. The system according to claim 40, wherein the portable terminal includes a transmitting section that transmits identification information indicating a type of the portable terminal together with the request information, and wherein the base station includes a determining section that determines the type of the portable terminal according to the identification information, and a discount control section that controls the charging section to discount a charge if the portable terminal qualifies by the determined type.

42. The system according to claim 40, wherein the portable terminal includes a transmitting section that transmits identification information indicating a type of the tone generating section equipped in the portable terminal together with the request information, and wherein the base station includes a determining section that determines the type of the tone generator section equipped in the portable terminal according to the identification information, and a discount control section that controls the charging section to discount a charge if the tone generator section equipped in the portable terminal qualifies by the determined type.

43. The system according to claim 39, wherein the memory of the portable terminal has a limited capacity such as to store the music information in a compact format which is downsized from a non-compact format of the music information before storage of the music information.

44. The system according to claim 43, wherein the memory stores the music information in a compact format which is downsized from a non-compact format of a standard MIDI file.

45. The system according to claim 39, wherein the base station further comprises a determining section that determines a format type of the selected music information.

46. The system according to claim 39, wherein the portable terminal further comprises a transmitting section that transmits identification information indicative of a model type of the portable terminal together with the request information to the base station.

47. The system according to claim 46, wherein the base station further comprises a first determining section that determines a format type of the selected music information, and a second determining section that operates based on the determined format type of the selected music information and the model type of the portable terminal indicated by the transmitted identification information for determining whether the selected music information is valid in the portable terminal.

48. The system according to claim 47, wherein the base station further comprises a converting section that converts the format type of the selected music information if the second determining section determines that the selected music information is not valid in the portable terminal.

49. The system according to claim 48, wherein the converting section converts the format type of the selected music information by means of a conversion table.

50. The system according to claim 39, wherein the portable terminal further comprises a transmitting section that transmits identification information indicative of a model type of the tone generator section equipped in the portable terminal together with the request information to the base station.

51. The system according to claim 50, wherein the base station further comprises a first determining section that determines a format type of the selected music information, and a second determining section that operates based on the determined format type of the selected music information and the model type of the tone generator section indicated by the transmitted identification information for determining whether the selected music information is valid in the tone generator section equipped in the portable terminal.

52. The system according to claim 51, wherein the base station further comprises a converting section that converts the format type of the selected music information if the second determining section determines that the

selected music information is not valid in the tone generator section of the portable terminal.

53. The system according to claim 52, wherein the converting section converts the format type of the selected music information by means of a conversion table.

54. The system according to claim 39, wherein the setting section sets the selected music information by configuration information effective to specify a predetermined timbre.

55. The system according to claim 39, wherein the setting section sets the selected music information by configuration information effective to specify a timbre, which is selected by a user command.

56. The system according to claim 39, wherein the setting section sets the selected music information by configuration information effective to specify a timbre, which is automatically detected according to the selected music information.

57. The system according to claim 39, wherein the portable terminal has a telephony section that can perform a telephony communication, and wherein the transmitting

section of the base station can transmit the configuration information together with the selected music information at the time of performing the telephony communication.

58. The system according to claim 39, wherein the tone generating section operates immediately after the selected music information is transmitted from the base station together with the configuration information for generating the music tone having the specified timbre.

59. A system designed for dealing with music information, and comprised of a portable terminal having a capability of generating a music tone and a base station having a source of music information, wherein

the base station comprises:

a selecting section that selects music information from the source in response to request information transmitted from the portable terminal,

a setting section that sets the selected music information by configuration information effective to specify a timbre and an effect of a music tone determined by the selected music information; and

a transmitting section that transmits the selected music information together with the configuration information to the portable terminal, and wherein

the portable terminal comprises:

a memory that stores the music information transmitted from the base station, and

a tone generating section that is configured by the configuration information transmitted from the base station and that operates based on the transmitted music information to generate the music tone having the specified timbre and the effect.

60. A base station for receiving request information from a portable terminal and for transmitting music information to the portable terminal in response to the request information, the base station comprising:

a source of music information;

a selecting section that selects music information from the source in response to the request information transmitted from the portable terminal;

a setting section that sets the selected music information by configuration information effective to specify a timbre of a music tone determined by the selected music information; and

a transmitting section that transmits the selected music information together with the configuration information to the portable terminal so that the portable terminal can generate the music tone having the specified timbre.

61. The base station according to claim 60, wherein the base station includes a charging section that charges the portable terminal for delivery of the selected the music information to the portable terminal.

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62. The base station according to claim 61, further comprising a receiving section that receives identification information indicating a type of the portable terminal together with the request information, a determining section that determines the type of the portable terminal according to the identification information, and a discount control section that controls the charging section to discount a charge if the portable terminal qualifies by the determined type.

63. The base station according to claim 61, wherein the portable terminal includes a tone generator for generating a music tone, the base station further comprising a receiving section that receives identification information indicating a type of the tone generator equipped in the portable terminal together with the request information, a determining section that determines the type of the tone generator equipped in the portable terminal according to the identification information, and a discount control section that controls the charging section to discount a

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charge if the tone generator equipped in the portable terminal qualifies by the determined type.

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64. The base station according to claim 60, wherein the transmitting section downsizes the music information so that a memory of the portable terminal having a limited capacity can store the music information in a compact format which is downsized from a non-compact format of the music information.

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65. The base station according to claim 64, wherein the transmitting section downsizes the music information in a compact format from a non-compact format of a standard MIDI file.

66. The base station according to claim 60, further comprising a determining section that determines a format type of the selected music information.

67. The base station according to claim 60, wherein the portable terminal further comprises a transmitting section that transmits identification information indicative of a model type of the portable terminal together with the request information to the base station, the base station further comprising a receiving section for receiving the

identification information together with the request information.

68. The base station according to claim 67, further comprising a first determining section that determines a format type of the selected music information, and a second determining section that operates based on the determined format type of the selected music information and the model type of the portable terminal indicated by the received identification information for determining whether the selected music information is valid in the portable terminal.

69. The base station according to claim 68, further comprising a converting section that converts the format type of the selected music information if the second determining section determines that the selected music information is not valid in the portable terminal.

70. The base station according to claim 69, wherein the converting section converts the format type of the selected music information by means of a conversion table.

71. The base station according to claim 60, wherein the portable terminal has a tone generator for generating a music tone, the base station further comprising a receiving

section that receives identification information indicative of a model type of the tone generator equipped in the portable terminal together with the request information.

72. The base station according to claim 71, further comprising a first determining section that determines a format type of the selected music information, and a second determining section that operates based on the determined format type of the selected music information and the model type of the tone generator indicated by the received identification information for determining whether the selected music information is valid in the tone generator equipped in the portable terminal.

73. The base station according to claim 72, further comprising a converting section that converts the format type of the selected music information if the second determining section determines that the selected music information is not valid in the tone generator of the portable terminal.

74. The base station according to claim 73, wherein the converting section converts the format type of the selected music information by means of a conversion table.

75. The base station according to claim 60, wherein the setting section sets the selected music information by configuration information effective to specify a predetermined timbre.

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76. The base station according to claim 60, wherein the setting section sets the selected music information by configuration information effective to specify a timbre, which is selected by a user command.

77. The base station according to claim 60, wherein the setting section sets the selected music information by configuration information effective to specify a timbre, which is automatically detected according to the selected music information.

78. The base station according to claim 60, wherein the portable terminal has a telephony section that can perform a telephony communication, and wherein the transmitting section of the base station can transmit the configuration information together with the selected music information at the time of performing the telephony communication.

79. A base station for receiving request information from a portable terminal and for transmitting music information

to the portable terminal in response to the request information, the base station comprising:

a source of a plurality of music information;

a selecting section that selects music information from the source in response to the request information transmitted from the portable terminal;

a setting section that sets the selected music information by configuration information effective to specify a timbre and an effect applied to a music tone determined by the selected music information; and

a transmitting section that transmits the selected music information together with the configuration information to the portable terminal so that the portable terminal can generate the music tone having the specified timbre and the specified effect.

80. A system comprised of a portable terminal apparatus having a capability of generating a music tone, and a music information processing apparatus capable of creating and editing music information representative of a music tone, wherein

the music information processing apparatus comprises:

a creating and editing section that creates and edits music information;

a compression section that compresses the music information; and

a transmitting section that transmits the compressed music information to the portable terminal apparatus, and wherein

the portable terminal apparatus comprises:

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a memory for memorizing the compressed music information which is passed from the music information processing apparatus; and

a tone generator that operates based on the memorized music information to generate a musical tone having a timbre specified by the memorized music information.

81. The system according to claim 80, wherein the creating and editing section creates and edits music information in a standard MIDI format, and the music information processing apparatus further comprises a converting section for converting the music information from the standard MIDI format to another format corresponding to the portable terminal apparatus.

82. The system according to claim 80, wherein the music information processing apparatus further comprises a tone generating section that operates based on the compressed music information to generate a musical tone having a timbre specified by the compressed music information.

83. The system according to claim 80, wherein the creating and editing section creates and edits music information having a plurality of timbre parameters for specifying a timbre, and the compression section compresses the music information by removing at least one timbre parameter.

84. The system according to claim 80, wherein the creating and editing section creates and edits music information composed of a plurality of tracks, and the compression section compresses the music information by extracting a predetermined number of the tracks from the music information.

85. A system comprised of a portable terminal apparatus having a capability of generating a music tone, and a music information processing apparatus capable of creating and editing music information representative of a music tone, wherein

the music information processing apparatus comprises:
a creating and editing section that creates and edits music information;

a compression section that compresses the music information; and

a transmitting section that transmits the compressed music information to the portable terminal apparatus, and wherein

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the portable terminal apparatus comprises:
a memory for memorizing the compressed music information which is passed from the music information processing apparatus; and
a tone generator that operates based on the memorized music information to generate a musical tone having a predetermined timbre and effect.

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86. A music information processing apparatus capable of creating and editing music information representative of a music tone and transmitting the music information to a portable terminal apparatus having a capability of generating a music tone, the music information processing apparatus comprising:

a creating and editing section that creates and edits music information;

a compression section that compresses the music information; and

a transmitting section that transmits the compressed music information to the portable terminal apparatus so that the portable terminal apparatus operates based on the transmitted music information to generate a music tone having a predetermined timbre.

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87. The music information processing apparatus according to claim 86, wherein the creating and editing section

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creates and edits music information in a standard MIDI format, and further comprising a converting section for converting the music information from the standard MIDI format to another format corresponding to the portable terminal apparatus.

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88. The music information processing apparatus according to claim 86, further comprising a tone generating section that operates based on the compressed music information to generate a musical tone having a timbre specified by the compressed music information.

89. The music information processing apparatus according to claim 86, wherein the creating and editing section creates and edits music information having a plurality of timbre parameters for specifying a timbre, and the compression section compresses the music information by removing at least one timbre parameter.

90. The music information processing apparatus according to claim 86, wherein the creating and editing section creates and edits music information composed of a plurality of tracks, and the compression section compresses the music information by extracting a predetermined number of the tracks from the music information.

91. A portable terminal apparatus having a first capability of transmitting and receiving various information including music information, and a second capability of generating a desired music tone according to music information reserved in an information source in association to the first capability, the portable terminal apparatus comprising:

a retrieving section that retrieves music information from the information source;

a memory section that memorizes the retrieved music information;

an editing section that edits the memorized music information; and

a tone generating section that operates based on the edited music information to generate a desired music tone having a predetermined timbre.

92. The portable terminal apparatus according to claim 91, wherein the memory section has a limited capacity such as to memorize the music information in a compact format which is downsized from a non-compact format of the music information before storage of the music information.

93. The portable terminal apparatus according to claim 92, wherein the memory section memorizes the music information

in a compact format which is downsized from a non-compact format of a standard MIDI file.

94. The portable terminal apparatus according to claim 91, wherein the retrieving section retrieves music information from the information source composed of a recording medium, which is attachable to the portable terminal apparatus.

95. The portable terminal apparatus according to claim 91, wherein the retrieving section retrieves music information from the information source composed of another portable terminal apparatus.

96. The portable terminal apparatus according to claim 95, further comprising a request information generating section that generates request information effective to request said another portable terminal apparatus to acquire the music information, and a request information transmitting section that transmits the generated request information to said another portable terminal apparatus, so that the retrieving section can retrieve the music information from the information source composed of said another portable terminal.

97. The portable terminal apparatus according to claim 95, further comprising a request information receiving section

that receives request information from said another portable terminal apparatus, so that the retrieving section responds to the received request information to retrieve the music information from said another portable terminal.

98. The portable terminal apparatus according to claim 91, wherein the retrieving section retrieves music information from the information source composed of a base station.

99. The portable terminal apparatus according to claim 91, wherein the retrieving section retrieves music information from the information source composed of a personal computer.

100. The portable terminal apparatus according to claim 91, wherein the editing section edits the memorized music information by attaching configuration information effective to configure the tone generating section.

101. The portable terminal apparatus according to claim 91, wherein the editing section edits the memorized music information by compressing the music information.

102. The portable terminal apparatus according to claim 91, wherein the editing section edits the memorized music

information by converting a format of the music information in corresponding to a type of the tone generating section.

103. A portable terminal apparatus having a first capability of transmitting and receiving various information including music information, and a second capability of generating a desired music tone according to music information reserved in an information source in association to the first capability, the portable terminal apparatus comprising:

a retrieving section that retrieves music information from the information source;

a memory section that memorizes the retrieved music information;

an editing section that edits the memorized music information; and

a tone generating section that operates based on the edited music information to generate a desired music tone having a predetermined timbre and a predetermined effect.

104. A portable terminal apparatus having a tone generator and a display monitor for presenting information, comprising:

a communication section that is operated to transmit and receive various information;

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a memory section that stores karaoke information including music information representing a music piece and lyric information representing words corresponding to the music piece;

a sound control section that is operated according to the music information for controlling the tone generator to generate tones of the music piece; and

a display control section that is operated according to the lyric information for controlling the display monitor to display the words in parallel to progression of the music piece.

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105. The portable terminal apparatus according to claim 104, further comprising an input control operated to select one music piece from the memory section which reserves a plurality of music pieces, so that the sound control section controls the tone generator to generate tones of the selected music piece, and the display control section controls the display monitor to display the lyric words in parallel to progression of the selected music piece.

106. The portable terminal apparatus according to claim 104, wherein the memory section stores karaoke information loaded from an external recording medium.

107. The portable terminal apparatus according to claim 104, wherein the memory section stores karaoke information received from a personal computer.

108. The portable terminal apparatus according to claim 104, wherein the memory section stores karaoke information received from another portable terminal apparatus.

109. The portable terminal apparatus according to claim 104, wherein the memory section stores karaoke information received from a base station.

110. The portable terminal apparatus according to claim 104, wherein the memory section stores karaoke information loaded from an external recording medium.

111. The portable terminal apparatus according to claim 104, wherein the memory section stores karaoke information corresponding to a part of one music piece.

112. The portable terminal apparatus according to claim 104, wherein the memory section stores music information composed of a sequence of event data representing tones and timing data determining timings of generating tones along the progression of the music pieces, and stores lyric information composed of a sequence of event data

representing words and timing data determining timings of displaying words along the progression of the music piece.

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113. The portable terminal apparatus according to claim 104, further comprising a separating section that separates the karaoke information into the music information and the lyric information, so that the sound control section controls the tone generator to generate tones according to the separated music information, and the display control section controls the display monitor to display the lyric words according to the separated lyric information.

114. A portable terminal apparatus having a tone generator and a display monitor, comprising:

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a communication section that is operated to exchange a talk voice with a ringing tone;

a memory section that stores first music information representing a ringing tone, second music information representing a karaoke music piece, and lyric information representing lyric words of the karaoke music piece;

a sound control section that is operated according to the second music information for controlling the tone generator to generate tones of the karaoke music piece; and

a display control section that is operated according to the lyric information for controlling the display

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monitor to display the lyric words in parallel to progression of the karaoke music piece, wherein

the sound control section operates according to a command from the communication section for controlling the tone generator to stop the tones of the music piece and to start the ringing tone.

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115. The portable terminal apparatus according to claim 114, wherein the display control section controls the display monitor to display an icon for indicating that the tone generator stops the tones of the karaoke music piece and starts the ringing tone.

116. The portable terminal apparatus according to claim 115, wherein the display control section controls the display monitor to flash the icon.

117. The portable terminal apparatus according to claim 114, wherein the display control section controls the display monitor to stop displaying of the lyric words when the tone generator stops the tones of the karaoke music piece and starts the ringing tone.

118. The portable terminal apparatus according to claim 114, wherein the display control section controls the

display monitor to variably display the lyric words such as to prompt the progression of the karaoke music piece.

119. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the portable terminal apparatus comprising:

a memory that memorizes the music information having a parameter characterizing the music tone;

a display that displays the parameter; and

an editing device that edits the displayed parameter to modify the music tone.

120. The portable terminal apparatus according to claim 119, further comprising a tone generator of a frequency modulation type for generating the music tone.

121. The portable terminal apparatus according to claim 120, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

122. The portable terminal apparatus according to claim 120, wherein the tone generator is comprised of a central

processing unit executing a software to generate the music tone.

123. The portable terminal apparatus according to claim 119, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

124. The portable terminal apparatus according to claim 123, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

125. The portable terminal apparatus according to claim 123, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

126. The portable terminal apparatus according to claim 119, further comprising a tone generator of a physical modeling type for generating the music tone.

127. The portable terminal apparatus according to claim 126, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

128. The portable terminal apparatus according to claim 126, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

129. The portable terminal apparatus according to claim 119, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

130. The portable terminal apparatus according to claim 119, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

131. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the portable terminal apparatus comprising:

a memory that memorizes the music information representing the music tone;

a tempo designating section that designates a tempo of the music tone; and

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(cont.)

a tempo control section that operates based on the memorized music information and controls the generating of the music tone at the designated tempo.

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132. The portable terminal apparatus according to claim 131, further comprising a tone generator of a frequency modulation type for generating the music tone.

133. The portable terminal apparatus according to claim 132, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

134. The portable terminal apparatus according to claim 132, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

135. The portable terminal apparatus according to claim 131, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

136. The portable terminal apparatus according to claim 135, wherein the tone generator is comprised of a digital

signal processor operated by a microprogram to generate the music tone.

137. The portable terminal apparatus according to claim 135, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

138. The portable terminal apparatus according to claim 131, further comprising a tone generator of a physical modeling type for generating the music tone.

139. The portable terminal apparatus according to claim 138, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

140. The portable terminal apparatus according to claim 138, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

141. The portable terminal apparatus according to claim 131, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

142. The portable terminal apparatus according to claim 131, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

143. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the portable terminal apparatus comprising:

a memory that memorizes the music information representing the music tone;

a mood setting section that sets a mood of the music tone; and

a mood control section that operates based on the memorized music information and controls the generating of the music tone according to the mood set by the mood setting section.

144. The portable terminal apparatus according to claim 143, further comprising a tone generator of a frequency modulation type for generating the music tone.

145. The portable terminal apparatus according to claim 144, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

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146. The portable terminal apparatus according to claim 144, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

147. The portable terminal apparatus according to claim 143, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

148. The portable terminal apparatus according to claim 147, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

149. The portable terminal apparatus according to claim 147, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

150. The portable terminal apparatus according to claim 143, further comprising a tone generator of a physical modeling type for generating the music tone.

151. The portable terminal apparatus according to claim 150, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

152. The portable terminal apparatus according to claim 150, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

153. The portable terminal apparatus according to claim 143, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

154. The portable terminal apparatus according to claim 143, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

155. A portable terminal apparatus having a first capability of transmitting and receiving various

information, and a second capability of generating a tone of a music piece represented by music data in association with the first capability, the portable terminal apparatus comprising:

an input device that inputs music data representing a part of the music piece; and

an automatic synthesis device that automatically synthesize the whole of the music piece according to the inputted music data.

156. The portable terminal apparatus according to claim 155, further comprising a tone generator of a frequency modulation type for generating the music tone.

157. The portable terminal apparatus according to claim 156, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

158. The portable terminal apparatus according to claim 156, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

159. The portable terminal apparatus according to claim 155, further comprising a tone generator having a wave-

table memory storing a waveform of the music tone for generating the music tone.

160. The portable terminal apparatus according to claim 159, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

161. The portable terminal apparatus according to claim 159, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

162. The portable terminal apparatus according to claim 155, further comprising a tone generator of a physical modeling type for generating the music tone.

163. The portable terminal apparatus according to claim 162, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

164. The portable terminal apparatus according to claim 162, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

165. The portable terminal apparatus according to claim 155, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

166. The portable terminal apparatus according to claim 155, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

167. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the portable terminal comprising:

an acquiring section that acquires a sample tone signal having a pitch sequence;

an extracting section that extracts the pitch sequence from the sample tone signal; and

a creating section that creates the music information according to the pitch sequence.

168. The portable terminal apparatus according to claim 167, wherein the acquiring section includes a microphone for collecting the sample tone signal.

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169. The portable terminal apparatus according to claim 167, further comprising a transmitting and receiving section tat can receive information containing the sample tone signal, so that the acquiring section acquires the sample tone signal from the received information.

170. The portable terminal apparatus according to claim 171, further comprising a tone generator of a frequency modulation type for generating the music tone.

171. The portable terminal apparatus according to claim 170, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

172. The portable terminal apparatus according to claim 170, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

173. The portable terminal apparatus according to claim 167, further comprising a tone generator having a wave-

table memory storing a waveform of the music tone for generating the music tone.

174. The portable terminal apparatus according to claim 173, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

175. The portable terminal apparatus according to claim 173, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

176. The portable terminal apparatus according to claim 167, further comprising a tone generator of a physical modeling type for generating the music tone.

177. The portable terminal apparatus according to claim 176, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

178. The portable terminal apparatus according to claim 176, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

179. The portable terminal apparatus according to claim 167, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

180. The portable terminal apparatus according to claim 167, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

181. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the portable terminal apparatus comprising:

an acquiring section that acquires a sample tone signal having a pitch sequence;

an extracting section that extracts the pitch sequence from the sample tone signal;

a transposing section that transposes the extracted pitch sequence; and

a creating section that creates the music information according to the transposed pitch sequence.

182. The portable terminal apparatus according to claim 181, further comprising a tone generator of a frequency modulation type for generating the music tone.

183. The portable terminal apparatus according to claim 182, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

184. The portable terminal apparatus according to claim 182, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

185. The portable terminal apparatus according to claim 181, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

186. The portable terminal apparatus according to claim 185, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

187. The portable terminal apparatus according to claim 185, wherein the tone generator is comprised of a central

processing unit executing a software to generate the music tone.

188. The portable terminal apparatus according to claim 181, further comprising a tone generator of a physical modeling type for generating the music tone.

189. The portable terminal apparatus according to claim 188, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

190. The portable terminal apparatus according to claim 188, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

191. The portable terminal apparatus according to claim 181, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

192. The portable terminal apparatus according to claim 181, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

193. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating music tones in association with the first capability according to music information, the portable terminal apparatus comprising:

a memory section that memorizes original music information representing a sequence of music tones having a chord progression;

an analyzing section that analyzes the memorized original music information to detect therefrom the chord progression; and

an automatic creating section that automatically creates new music information according to the detected chord progression in matching with the original music information.

194. The portable terminal apparatus according to claim 193, further comprising a tone generator of a frequency modulation type for generating the music tone.

195. The portable terminal apparatus according to claim 194, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

196. The portable terminal apparatus according to claim 194, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

197. The portable terminal apparatus according to claim 193, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

198. The portable terminal apparatus according to claim 197, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

199. The portable terminal apparatus according to claim 197, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

200. The portable terminal apparatus according to claim 193, further comprising a tone generator of a physical modeling type for generating the music tone.

201. The portable terminal apparatus according to claim 200, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

202. The portable terminal apparatus according to claim 200, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

203. The portable terminal apparatus according to claim 193, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

204. The portable terminal apparatus according to claim 193, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

205. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the portable terminal apparatus comprising:

a memory section that memorizes a plurality of original music information representing different sequences of music tones; and

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a creating section that connects the memorized different sequences of the music tones with each other in series to create new music information representing a composite sequence of the music tones.

206. The portable terminal apparatus according to claim 205, further comprising a tone generator of a frequency modulation type for generating the music tone.

207. The portable terminal apparatus according to claim 206, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

208. The portable terminal apparatus according to claim 206, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

209. The portable terminal apparatus according to claim 205, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

210. The portable terminal apparatus according to claim 209, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

211. The portable terminal apparatus according to claim 209, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

212. The portable terminal apparatus according to claim 205, further comprising a tone generator of a physical modeling type for generating the music tone.

213. The portable terminal apparatus according to claim 212, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

214. The portable terminal apparatus according to claim 212, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

215. The portable terminal apparatus according to claim 205, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

216. The portable terminal apparatus according to claim 205, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

217. A portable terminal apparatus having a main capability of transmitting and receiving various information, and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, the portable terminal apparatus comprising:

an acquiring section that acquires music information of a second format, which is invalid; and

a converting section that converts the acquired music information from the second format to the first format, which is valid for generation of the music tone.

218. The portable terminal apparatus according to claim 217, further comprising a tone generator of a frequency modulation type for generating the music tone.

219. The portable terminal apparatus according to claim 218, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

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220. The portable terminal apparatus according to claim 218, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

221. The portable terminal apparatus according to claim 217, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

222. The portable terminal apparatus according to claim 221, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

223. The portable terminal apparatus according to claim 221, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

224. The portable terminal apparatus according to claim 217, further comprising a tone generator of a physical modeling type for generating the music tone.

225. The portable terminal apparatus according to claim 224, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

226. The portable terminal apparatus according to claim 224, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

227. The portable terminal apparatus according to claim 217, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

228. The portable terminal apparatus according to claim 217, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

229. A system comprising a portable terminal having a main capability of transmitting and receiving various

information and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, and a base station that supports the portable terminal, wherein the base station comprises:

an information source that stores music information of a second format, which is invalid for the portable terminal;

a converting section that converts the stored music information from the second format to the first format, which is valid for the portable terminal; and

a transmitting section that transmits the converted music information of the first format to the portable terminal.

230. The system according to claim 229, wherein the portable terminal comprises a tone generator of a frequency modulation type for generating the music tone.

231. The system according to claim 230, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

232. The system according to claim 230, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

233. The system according to claim 229, wherein the portable terminal comprises a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

234. The system according to claim 233, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

235. The system according to claim 233, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

236. The system according to claim 229, wherein the portable terminal comprises a tone generator of a physical modeling type for generating the music tone.

237. The system according to claim 236, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

238. The system according to claim 236, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

239. The system according to claim 229, wherein the portable terminal comprises a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

240. The system according to claim 229, wherein the portable terminal comprises a tone generator constituted by a central processing unit for executing a software to generate the music tone.

241. A system comprising a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a predetermined format in association with the main capability, and a base station that supports the portable terminal, wherein the base station comprises:

a receiving section that receives identification information from the portable terminal for identifying the predetermined format valid in the portable terminal;

a creating section that creates the music information of the predetermined format according to the received identification information; and

a transmitting section that transmits the created music information of the predetermined format to the portable terminal.

242. The system according to claim 241, wherein the portable terminal comprises a tone generator of a frequency modulation type for generating the music tone.

243. The system according to claim 242, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

244. The system according to claim 242, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

245. The system according to claim 241, wherein the portable terminal comprises a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

246. The system according to claim 245, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

247. The system according to claim 245, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

248. The system according to claim 241, wherein the portable terminal comprises a tone generator of a physical modeling type for generating the music tone.

249. The system according to claim 248, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

250. The system according to claim 248, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

251. The system according to claim 241, wherein the portable terminal comprises a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

252. The system according to claim 241, wherein the portable terminal comprises a tone generator constituted by a central processing unit for executing a software to generate the music tone.

253. A base station for supporting a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a first

format in association with the main capability, the base station comprising:

an information source that stores music information of a second format, which is invalid for the portable terminal;

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a converting section that converts the stored music information from the second format to the first format, which is valid for the portable terminal; and

a transmitting section that transmits the converted music information of the first format to the portable terminal.

254. A base station for supporting a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a predetermined format in association with the main capability, the base station comprising:

a receiving section that receives identification information from the portable terminal for identifying the predetermined format valid in the portable terminal;

a creating section that creates the music information of the predetermined format according to the received identification information; and

a transmitting section that transmits the created music information of the predetermined format to the portable terminal.

255. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the portable terminal apparatus comprising:

a connector connectable to a removable compact memory medium, which stores music information;

a retrieving section that retrieves the music information from the removable compact memory medium; and

a processing section that processes the retrieved music information for the generating of the music tone.

256. The portable terminal apparatus according to claim 255, further comprising a tone generator of a frequency modulation type for generating the music tone.

257. The portable terminal apparatus according to claim 256, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

258. The portable terminal apparatus according to claim 256, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

259. The portable terminal apparatus according to claim 255, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

260. The portable terminal apparatus according to claim 259, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

261. The portable terminal apparatus according to claim 259, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

262. The portable terminal apparatus according to claim 255, further comprising a tone generator of a physical modeling type for generating the music tone.

263. The portable terminal apparatus according to claim 262, wherein the tone generator is comprised of a digital

signal processor operated by a microprogram to generate the music tone.

264. The portable terminal apparatus according to claim 262, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

265. The portable terminal apparatus according to claim 255, further comprising a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

266. The portable terminal apparatus according to claim 255, further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

267. A portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the portable terminal apparatus comprising:

a processing section that processes the music information for the generating of the music tones;

a connector connectable to a removable compact memory medium; and

a writing section that writes the processed music information into the removable compact memory for storage of the processed music information.

268. The portable terminal apparatus according to claim 267, further comprising a tone generator of a frequency modulation type for generating the music tone.

269. The portable terminal apparatus according to claim 268, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

270. The portable terminal apparatus according to claim 268, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

271. The portable terminal apparatus according to claim 267, further comprising a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

272. The portable terminal apparatus according to claim 271, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

273. The portable terminal apparatus according to claim 271, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

274. The portable terminal apparatus according to claim 267, further comprising a tone generator of a physical modeling type for generating the music tone.

275. The portable terminal apparatus according to claim 274, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

276. The portable terminal apparatus according to claim 274, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

277. The portable terminal apparatus according to claim 267, further comprising a tone generator constituted by a

digital signal processor for executing a microprogram to generate the music tone.

278. The portable terminal apparatus according to claim 267 further comprising a tone generator constituted by a central processing unit for executing a software to generate the music tone.

279. A system comprising a portable terminal having a first capability of transmitting and receiving various information and a second capability of generating a music tone represented by the music information in association with the first capability, and a base station that supports the portable terminal, wherein the base station comprises:

an information source that stores music information;

and

a transmitting section that transmits the stored music information in the form of streaming data to the portable terminal, and

wherein the portable terminal comprises:

a receiving section that receives the streaming data;

and

a reproducing section that reproduces the music tone in real time according to the received streaming data.

280. The system according to claim 279, wherein the reproducing section comprises a tone generator of a frequency modulation type for generating the music tone.

281. The system according to claim 280, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

282. The system according to claim 280, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

283. The system according to claim 279, wherein the reproducing section comprises a tone generator having a wave-table memory storing a waveform of the music tone for generating the music tone.

284. The system according to claim 283, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

285. The system according to claim 283, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

286. The system according to claim 279, wherein the reproducing section comprises a tone generator of a physical modeling type for generating the music tone.

287. The system according to claim 286, wherein the tone generator is comprised of a digital signal processor operated by a microprogram to generate the music tone.

288. The system according to claim 286, wherein the tone generator is comprised of a central processing unit executing a software to generate the music tone.

289. The system according to claim 279, wherein the reproducing section comprises a tone generator constituted by a digital signal processor for executing a microprogram to generate the music tone.

290. The system according to claim 279, wherein the reproducing section comprises a tone generator constituted by a central processing unit for executing a software to generate the music tone.

291. A base station for supporting a portable terminal having a first capability of transmitting and receiving various information and a second capability of generating a music tone represented by the music information in

association with the first capability, the base station comprising:

an information source that stores music information;

and

a transmitting section that transmits the stored music information in the form of streaming data to the portable terminal, so that the portable terminal can reproduce the music tone in real time in response to the transmitted streaming data.

292. A sound control method in a portable terminal for sounding a music tone in association with operation of the portable terminal, comprising the steps of:

storing music information representing a music tone and configuration information associated to a timbre of the music tone in a memory;

acquiring the music information and the configuration information from the memory; and

configuring a tone generating section by the acquired configuration information to create a timbre specified by the configuration information; and

operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre.

293. A method of sound control in a portable terminal for sounding a music tone in association with operation of the portable terminal, comprising the steps of:

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storing music information representing a music tone and configuration information associated to a timbre and an effect of the music tone;

acquiring the music information and the configuration information from the memory;

configuring a tone generator by the acquired configuration information to create a timbre specified by the configuration information;

operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre; and

configuring an effector by the configuration information for applying an effect specified by the configuration information to the generated music tone.

294. A sound control method in a portable terminal for sounding a music tone in association with operation of the portable terminal which is executed by a first processor, the sound control method comprising the steps of:

memorizing music information representing a music tone and configuration information associated to a timbre of the music tone;

acquiring the music information and the configuration information from the memory;

configuring a tone generator by the acquired configuration information to create a timbre specified by the configuration information;

operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre; and

using a second processor provided separately from the first processor for controlling the memory and the tone generator.

295. A sound control method in a portable terminal for sounding a music tone in association with operation of the portable terminal which is executed by a first processor, the sound control method comprising the steps of:

memorizing music information representing a music tone and configuration information associated to a timbre and an effect of the music tone in a memory;

acquiring the music information and the configuration information from the memory;

configuring a tone generator by the acquired configuration information to create a timbre and an effect specified by the configuration information;

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operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre and the effect; and

using a second processor provided separately from the first processor for controlling the memory and the tone generator.

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296. A method of using a portable terminal, comprising the steps of:

operating a communication device that transmits and receives various information;

storing various information including music information representative of a music tone, configuration information associated to a timbre of the music tone, and voice information representative of a speech voice;

configuring a tone generator according to the configuration information for generating the music tone according to the music information with the timbre specified by the configuration information; and

operating an audio device for processing the voice information stored in the memory so as to reproduce the speech voice represented by the voice information.

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297. A method of operating a portable terminal, comprising the steps of:

operating a communication device that transmits and receives various information;

storing various information including music information representative of a music tone, configuration information associated to a timbre of the music tone, and picture information representative of a visual image;

configuring a tone generator according to the configuration information for generating the music tone according to the music information with the timbre specified by the configuration information; and

operating a video device to process the picture information stored in the memory for reproducing the visual image represented by the picture information.

298. A method of operating a portable terminal, comprising the steps of:

operating a communication device that transmits and receives various information;

operating a memory to store various information including music information representative of a music tone, configuration information associated to a timbre and an effect of the music tone, voice information representative of a speech voice, and picture information representative of a visual image;

configuring a tone generator according to the configuration information for generating the music tone

according to the music information with the timbre and the effect specified by the configuration information;

operating an audio device to process the voice information stored in the memory for reproducing the speech voice represented by the voice information; and

operating a video device that processes the picture information stored in the memory for reproducing the visual image represented by the picture information.

299. A method of operating a system designed for dealing with music information, and comprised of a portable terminal having a capability of generating a music tone and a base station having a source of music information, the method comprising the steps of:

selecting music information from the source in the base station in response to request information transmitted from the portable terminal,

setting the selected music information in the base station by configuration information effective to specify a timbre of a music tone determined by the selected music information;

transmitting the selected music information together with the configuration information from the base station to the portable terminal;

operating a memory in the portable terminal to store the music information transmitted from the base station;

configuring a tone generator in the portable terminal by the configuration information transmitted from the base station; and

operating the tone generator in the portable terminal based on the transmitted music information to generate the music tone having the specified timbre.

300. A method of operating a system designed for dealing with music information, and comprised of a portable terminal having a capability of generating a music tone and a base station having a source of music information, the method comprising the steps of:

selecting music information from the source in the base station in response to request information transmitted from the portable terminal,

setting the selected music information in the base station by configuration information effective to specify a timbre and an effect of a music tone determined by the selected music information;

transmitting the selected music information together with the configuration information from the base station to the portable terminal;

operating a memory in the portable terminal to store the music information transmitted from the base station;

configuring a tone generator in the portable terminal by the configuration information transmitted from the base station; and

operating the tone generator in the portable terminal based on the transmitted music information to generate the music tone having the specified timbre and the specified effect.

301. A method of operating a base station for receiving request information from a portable terminal and for transmitting music information to the portable terminal in response to the request information, the method comprising the steps of:

selecting music information from an information source in response to the request information transmitted from the portable terminal;

setting the selected music information by configuration information effective to specify a timbre of a music tone determined by the selected music information; and

transmitting the selected music information together with the configuration information to the portable terminal so that the portable terminal can generate the music tone having the specified timbre.

302. A method of operating a base station for receiving request information from a portable terminal and for transmitting music information to the portable terminal in response to the request information, the method comprising the steps of:

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selecting music information from an information source in response to the request information transmitted from the portable terminal;

setting the selected music information by configuration information effective to specify a timbre and an effect applied to a music tone determined by the selected music information; and

transmitting the selected music information together with the configuration information to the portable terminal so that the portable terminal can generate the music tone having the specified timbre and the specified effect.

303. A method of operating a system comprised of a portable terminal apparatus having a capability of generating a music tone, and a music information processing apparatus capable of creating and editing music information representative of a music tone, the method comprising the steps of:

creating and editing music information in the music information processing apparatus;

compressing the music information in the music
information processing apparatus;

transmitting the compressed music information from
the music information processing apparatus to the portable
terminal apparatus;

operating a memory in the portable terminal apparatus
for memorizing the compressed music information which is
passed from the music information processing apparatus; and

operating a tone generator in the portable terminal
apparatus based on the memorized music information to
generate a musical tone having a predetermined timbre.

304. A method of operating a system comprised of a
portable terminal apparatus having a capability of
generating a music tone, and a music information processing
apparatus capable of creating and editing music information
representative of a music tone, the method comprising the
steps of:

creating and editing music information in the music
information processing apparatus;

compressing the music information in the music
information processing apparatus;

transmitting the compressed music information from
the music information processing apparatus to the portable
terminal apparatus;

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operating a memory in the portable terminal apparatus for memorizing the compressed music information which is passed from the music information processing apparatus; and

operating a tone generator in the portable terminal apparatus based on the memorized music information to generate a musical tone having a predetermined timbre and being applied with a predetermined effect.

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305. A method of operating a music information processing apparatus capable of creating and editing music information representative of a music tone and transmitting the music information to a portable terminal apparatus having a capability of generating a music tone, the method comprising the steps of:

creating and editing music information;

compressing the music information; and

transmitting the compressed music information to the portable terminal apparatus so that the portable terminal apparatus operates based on the transmitted music information to generate a music tone having a predetermined timbre.

306. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information including music information, and a second capability of generating a desired music tone

according to music information reserved in an information source in association with the first capability, the method comprising the steps of:

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- retrieving music information from the information source;
- operating a memory for memorizing the retrieved music information;
- editing the memorized music information; and
- operating a tone generator based on the edited music information to generate a desired music tone having a predetermined timbre.

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307. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information including music information, and a second capability of generating a desired music tone according to music information reserved in an information source in association with the first capability, the method comprising the steps of:

- retrieving music information from the information source;
- operating a memory for memorizing the retrieved music information;
- editing the memorized music information; and

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operating a tone generator based on the edited music information to generate a desired music tone having a predetermined timbre and a predetermined effect.

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308. A method of operating a portable terminal apparatus having a communication device, a memory, a tone generator and a display monitor for presenting information, comprising the steps of:

operating the communication device to transmit and receive various information;

operating the memory to store karaoke information including music information representing a music piece and lyric information representing words corresponding to the music piece;

controlling the tone generator according to the music information for generating tones of the music piece; and

controlling the display monitor according to the lyric information for displaying the words in parallel to progression of the music piece.

309. A method of operating a portable terminal apparatus having a communication device, a memory, a tone generator and a display monitor for presenting information, the method comprising the steps of:

operating the communication device to exchange a talk voice with a ringing tone;

operating the memory to store karaoke information including music information representing a music piece and lyric information representing words corresponding to the music piece;

controlling the tone generator according to the music information for generating tones of the music piece;

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controlling the display monitor according to the lyric information for displaying the words in parallel to progression of the music piece; and

controlling the tone generator according to a command from the communication device for stopping the tones of the music piece and for starting the ringing tone.

310. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the method comprising the steps of:

operating a memory to memorize the music information having a parameter characterizing the music tone;

displaying the parameter of the music information; and editing the displayed parameter to modify the music tone.

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311. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the method comprising the steps of:

operating a memory for memorizing the music information representing the music tone;
designating a tempo of the music tone; and
generating the music tone based on the memorized music information at the designated tempo.

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312. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the method comprising the steps of:

operating a memory for memorizing the music information representing the music tone;
setting a mood of the music tone; and
generating the music tone based on the memorized music information under the set mood.

313. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving

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various information, and a second capability of generating a tone of a music piece represented by music data in association with the first capability, the method comprising the steps of:

inputting music data representing a part of the music piece; and

automatically synthesizing the whole of the music piece according to the inputted music data.

314. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the method comprising the steps of:

acquiring a sample tone signal having a pitch sequence;

extracting the pitch sequence from the sample tone signal; and

creating the music information according to the pitch sequence.

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315. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information

in association with the first capability, the method comprising the steps of:

acquiring a sample tone signal having a pitch sequence;

extracting the pitch sequence from the sample tone signal;

transposing the extracted pitch sequence; and

creating the music information according to the transposed pitch sequence.

316. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating music tones in association with the first capability according to music information, the method comprising the steps of:

operating a memory for memorizing original music information representing a sequence of music tones having a chord progression;

analyzing the memorized original music information to detect therefrom the chord progression; and

automatically creating new music information according to the detected chord progression in matching with the original music information.

317. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the method comprising the steps of:

operating a memory for memorizing a plurality of original music information representing different sequences of music tones; and

connecting the memorized different sequences of the music tones with each other in series to create new music information representing a composite sequence of the music tones.

318. A method of operating a portable terminal apparatus having a main capability of transmitting and receiving various information, and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, the method comprising the steps of:

acquiring music information of a second format, which is invalid; and

converting the acquired music information from the second format to the first format, which is valid for generation of the music tone.

319. A method of operating a system composed of a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, and a base station that supports the portable terminal, the method comprising the steps of:

operating an information source in the base station for storing music information of a second format, which is invalid for the portable terminal;

converting the stored music information in the base station from the second format to the first format, which is valid for the portable terminal; and

transmitting the converted music information of the first format from the base station to the portable terminal.

320. A method of operating a system composed of a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a predetermined format in association with the main capability, and a base station that supports the portable terminal, the method comprising the steps of:

receiving identification information in the base station from the portable terminal for identifying the predetermined format valid in the portable terminal;

creating the music information of the predetermined format in the base station according to the received identification information; and

transmitting the created music information of the predetermined format from the base station to the portable terminal.

321. A method of operating a base station for supporting a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, the method comprising the steps of:

operating an information source for storing music information of a second format, which is invalid for the portable terminal;

converting the stored music information from the second format to the first format, which is valid for the portable terminal; and

transmitting the converted music information of the first format to the portable terminal.

322. A method of operating a base station for supporting a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a predetermined format in association with the main capability, the method comprising the steps of:

receiving identification information from the portable terminal for identifying the predetermined format valid in the portable terminal;

creating the music information of the predetermined format according to the received identification information; and

transmitting the created music information of the predetermined format to the portable terminal.

323. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the method comprising the steps of:

connecting a removable compact memory medium, which stores music information;

retrieving the music information from the connected removable compact memory medium; and

processing the retrieved music information for generating the music tone.

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324. A method of operating a portable terminal apparatus having a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the method comprising the steps of:

processing the music information for the generating of the music tones;

connecting a removable compact memory medium; and

writing the processed music information into the connected removable compact memory for storage of the processed music information.

Pub. 123
325. A method of operating a system comprised of a portable terminal having a first capability of transmitting and receiving various information and a second capability of generating a music tone represented by the music information in association with the first capability, and a base station that supports the portable terminal, the method comprising the steps of:

operating an information source in the base station for storing music information;

transmitting the stored music information in the form of streaming data from the base station to the portable terminal;

receiving the streaming data by the portable terminal apparatus; and

reproducing the music tone by the portable terminal apparatus in real time according to the received streaming data.

326. A method of operating a base station for supporting a portable terminal having a first capability of transmitting and receiving various information and a second capability of generating a music tone represented by the music information in association with the first capability, the method comprising the steps of:

operating an information source for storing music information; and

transmitting the stored music information in the form of streaming data to the portable terminal, so that the portable terminal can reproduce the music tone in real time in response to the transmitted streaming data.

327. A machine readable medium for use in a sound control apparatus having a processor and being provided in a portable terminal for sounding a music tone in association with operation of the portable terminal, the medium

containing program instructions executable by the processor for causing the sound control apparatus to perform a method comprising the steps of:

storing music information representing a music tone and configuration information associated to a timbre of the music tone in a memory;

acquiring the music information and the configuration information from the memory; and

configuring a tone generating section by the acquired configuration information to create a timbre specified by the configuration information; and

operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre.

328. A machine readable medium for use in a sound control apparatus having a processor and provided in a portable terminal for sounding a music tone in association with operation of the portable terminal, the medium containing program instructions executable by the processor for causing the sound control apparatus to perform a method comprising the steps of:

storing music information representing a music tone and configuration information associated to a timbre and an effect of the music tone;

acquiring the music information and the configuration information from the memory;

configuring a tone generator by the acquired configuration information to create a timbre specified by the configuration information;

operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre; and

configuring an effector by the configuration information for applying an effect specified by the configuration information to the generated music tone.

329. A machine readable medium for use in a sound control apparatus having a sub processor and provided in a portable terminal for sounding a music tone in association with operation of the portable terminal which is executed by a main processor, the medium containing program instructions executable by the sub processor for causing the sound control apparatus to perform a method comprising the steps of:

memorizing music information representing a music tone and configuration information associated to a timbre of the music tone;

acquiring the music information and the configuration information from the memory;

configuring a tone generator by the acquired configuration information to create a timbre specified by the configuration information;

operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre; and

using the sub processor provided separately from the main processor exclusively for controlling the memory and the tone generator.

330. A machine readable medium for use in a sound control apparatus having a sub processor and provided in a portable terminal for sounding a music tone in association with operation of the portable terminal which is executed by a main processor, the medium containing program instructions executable by the sub processor for causing the sound control apparatus to perform a method comprising the steps of:

memorizing music information representing a music tone and configuration information associated to a timbre and an effect of the music tone in a memory;

acquiring the music information and the configuration information from the memory;

configuring a tone generator by the acquired configuration information to create a timbre and an effect specified by the configuration information;

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operating the tone generator according to the acquired music information to generate the music tone being represented by the music information and having the specified timbre and the effect; and

using the sub processor provided separately from the main processor exclusively for controlling the memory and the tone generator.

Pub. 233
331. A machine readable medium for use in a portable terminal having a processor, the medium containing program instructions executable by the processor for causing the portable terminal to perform a method comprising the steps of:

operating a communication device that transmits and receives various information;

storing various information including music information representative of a music tone, configuration information associated to a timbre of the music tone, and voice information representative of a speech voice;

configuring a tone generator according to the configuration information for generating the music tone according to the music information with the timbre specified by the configuration information; and

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operating an audio device for processing the voice information stored in the memory so as to reproduce the speech voice represented by the voice information.

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332. A machine readable medium for use in a portable terminal having a processor, the medium containing program instructions executable by the processor for causing the portable terminal to perform a method comprising the steps of:

operating a communication device that transmits and receives various information;

storing various information including music information representative of a music tone, configuration information associated to a timbre of the music tone, and picture information representative of a visual image;

configuring a tone generator according to the configuration information for generating the music tone according to the music information with the timbre specified by the configuration information; and

operating a video device to process the picture information stored in the memory for reproducing the visual image represented by the picture information.

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333. A machine readable medium for use in a portable terminal having a processor, the medium containing program instructions executable by the processor for causing the

portable terminal to perform a method comprising the steps of:

operating a communication device that transmits and receives various information;

operating a memory to store various information including music information representative of a music tone, configuration information associated to a timbre and an effect of the music tone, voice information representative of a speech voice, and picture information representative of a visual image;

configuring a tone generator according to the configuration information for generating the music tone according to the music information with the timbre and the effect specified by the configuration information;

operating an audio device to process the voice information stored in the memory for reproducing the speech voice represented by the voice information; and

operating a video device that processes the picture information stored in the memory for reproducing the visual image represented by the picture information.

334. A machine readable medium for use in a system having a processor for dealing with music information, and being comprised of a portable terminal having a capability of generating a music tone and a base station having a source of music information, the medium containing program

instructions executable by the processor for causing the system to perform a method comprising the steps of:

selecting music information from the source in the base station in response to request information transmitted from the portable terminal,

setting the selected music information in the base station by configuration information effective to specify a timbre of a music tone determined by the selected music information;

transmitting the selected music information together with the configuration information from the base station to the portable terminal;

operating a memory in the portable terminal to store the music information transmitted from the base station;

configuring a tone generator in the portable terminal by the configuration information transmitted from the base station; and

operating the tone generator in the portable terminal based on the transmitted music information to generate the music tone having the specified timbre.

335. A machine readable medium for use in a system having a processor for dealing with music information, and being comprised of a portable terminal having a capability of generating a music tone and a base station having a source of music information, the medium containing program

instructions executable by the processor for causing the system to perform a method comprising the steps of:

selecting music information from the source in the base station in response to request information transmitted from the portable terminal,

setting the selected music information in the base station by configuration information effective to specify a timbre and an effect of a music tone determined by the selected music information;

transmitting the selected music information together with the configuration information from the base station to the portable terminal;

operating a memory in the portable terminal to store the music information transmitted from the base station;

configuring a tone generator in the portable terminal by the configuration information transmitted from the base station; and

operating the tone generator in the portable terminal based on the transmitted music information to generate the music tone having the specified timbre and the specified effect.

336. A machine readable medium for use in a base station having a processor for receiving request information from a portable terminal and for transmitting music information to the portable terminal in response to the request

information, the medium containing program instructions executable by the processor for causing the base station to perform a method comprising the steps of:

selecting music information from an information source in response to the request information transmitted from the portable terminal;

setting the selected music information by configuration information effective to specify a timbre of a music tone determined by the selected music information; and

transmitting the selected music information together with the configuration information to the portable terminal so that the portable terminal can generate the music tone having the specified timbre.

337. A machine readable medium for use in a base station for receiving request information from a portable terminal and for transmitting music information to the portable terminal in response to the request information, the medium containing program instructions executable by the processor for causing the base station to perform a method comprising the steps of:

selecting music information from an information source in response to the request information transmitted from the portable terminal;

setting the selected music information by configuration information effective to specify a timbre and an effect applied to a music tone determined by the selected music information; and

transmitting the selected music information together with the configuration information to the portable terminal so that the portable terminal can generate the music tone having the specified timbre and the specified effect.

338. A machine readable medium for use in a system having a processor and being comprised of a portable terminal apparatus having a capability of generating a music tone, and a music information processing apparatus capable of creating and editing music information representative of a music tone, the medium containing program instructions executable by the processor for causing the system to perform a method comprising the steps of:

creating and editing music information in the music information processing apparatus;

compressing the music information in the music information processing apparatus;

transmitting the compressed music information from the music information processing apparatus to the portable terminal apparatus;

operating a memory in the portable terminal apparatus for memorizing the compressed music information which is passed from the music information processing apparatus; and

operating a tone generator in the portable terminal apparatus based on the memorized music information to generate a musical tone having a predetermined timbre.

339. A machine readable medium for use in a system having a processor and being comprised of a portable terminal apparatus having a capability of generating a music tone, and a music information processing apparatus capable of creating and editing music information representative of a music tone, the medium containing program instructions executable by the processor for causing the system to perform a method comprising the steps of:

creating and editing music information in the music information processing apparatus;

compressing the music information in the music information processing apparatus;

transmitting the compressed music information from the music information processing apparatus to the portable terminal apparatus;

operating a memory in the portable terminal apparatus for memorizing the compressed music information which is passed from the music information processing apparatus; and

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operating a tone generator in the portable terminal apparatus based on the memorized music information to generate a musical tone having a predetermined timbre and being applied with a predetermined effect.

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340. A machine readable medium for use in a music information processing apparatus having a processor and being capable of creating and editing music information representative of a music tone and transmitting the music information to a portable terminal apparatus having a capability of generating a music tone, the medium containing program instructions executable by the processor for causing the musical information processing apparatus to perform a method comprising the steps of:

creating and editing music information;

compressing the music information; and

transmitting the compressed music information to the portable terminal apparatus so that the portable terminal apparatus operates based on the transmitted music information to generate a music tone having a predetermined timbre.

341. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information including music information, and a second

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capability of generating a desired music tone according to music information reserved in an information source in association with the first capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

retrieving music information from the information source;

operating a memory for memorizing the retrieved music information;

editing the memorized music information; and

operating a tone generator based on the edited music information to generate a desired music tone having a predetermined timbre.

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342. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information including music information, and a second capability of generating a desired music tone according to music information reserved in an information source in association with the first capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

retrieving music information from the information source;

operating a memory for memorizing the retrieved music information;

editing the memorized music information; and

operating a tone generator based on the edited music information to generate a desired music tone having a predetermined timbre and a predetermined effect.

343. A machine readable medium for use in a portable terminal apparatus having a processor, a communication device, a memory, a tone generator and a display monitor for presenting information, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

operating the communication device to transmit and receive various information;

operating the memory to store karaoke information including music information representing a music piece and lyric information representing words corresponding to the music piece;

controlling the tone generator according to the music information for generating tones of the music piece; and

controlling the display monitor according to the lyric information for displaying the words in parallel to progression of the music piece.

344. A machine readable medium for use in a portable terminal apparatus having a processor, a communication device, a memory, a tone generator and a display monitor for presenting information, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

operating the communication device to exchange a talk voice with a ringing tone;

operating the memory to store karaoke information including music information representing a music piece and lyric information representing words corresponding to the music piece;

controlling the tone generator according to the music information for generating tones of the music piece;

controlling the display monitor according to the lyric information for displaying the words in parallel to progression of the music piece; and

controlling the tone generator according to a command from the communication device for stopping the tones of the music piece and for starting the ringing tone.

345. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

operating a memory to memorize the music information having a parameter characterizing the music tone;
displaying the parameter of the music information; and
editing the displayed parameter to modify the music tone.

346. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information, and a second capability of generating a music tone in association with the first capability according to music information, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

operating a memory for memorizing the music information representing the music tone;

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designating a tempo of the music tone; and
generating the music tone based on the memorized music
information at the designated tempo.

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347. A machine readable medium for use in a portable
terminal apparatus having a processor to provide a first
capability of transmitting and receiving various
information, and a second capability of generating a music
tone in association with the first capability according to
music information, the medium containing program
instructions executable by the processor for causing the
portable terminal apparatus to perform a method comprising
the steps of:

operating a memory for memorizing the music
information representing the music tone;
setting a mood of the music tone; and
generating the music tone based on the memorized music
information under the set mood.

348. A machine readable medium for use in a portable
terminal apparatus having a processor to provide a first
capability of transmitting and receiving various
information, and a second capability of generating a tone
of a music piece represented by music data in association
with the first capability, the medium containing program
instructions executable by the processor for causing the

portable terminal apparatus to perform a method comprising the steps of:

inputting music data representing a part of the music piece; and

automatically synthesizing the whole of the music piece according to the inputted music data.

349. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

acquiring a sample tone signal having a pitch sequence;

extracting the pitch sequence from the sample tone signal; and

creating the music information according to the pitch sequence.

350. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various

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information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

acquiring a sample tone signal having a pitch sequence;

extracting the pitch sequence from the sample tone signal;

transposing the extracted pitch sequence; and

creating the music information according to the transposed pitch sequence.

351. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information, and a second capability of generating music tones in association with the first capability according to music information, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

operating a memory for memorizing original music information representing a sequence of music tones having a chord progression;

analyzing the memorized original music information to detect therefrom the chord progression; and

automatically creating new music information according to the detected chord progression in matching with the original music information.

352. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

operating a memory for memorizing a plurality of original music information representing different sequences of music tones; and

connecting the memorized different sequences of the music tones with each other in series to create new music information representing a composite sequence of the music tones.

353. A machine readable medium for use in a portable terminal apparatus having a processor to provide a main capability of transmitting and receiving various

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information, and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

acquiring music information of a second format, which is invalid; and

converting the acquired music information from the second format to the first format, which is valid for generation of the music tone.

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354. A machine readable medium for use in a system having a processor and being composed of a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, and a base station that supports the portable terminal, the medium containing program instructions executable by the processor for causing the system to perform a method comprising the steps of:

operating an information source in the base station for storing music information of a second format, which is invalid for the portable terminal;

converting the stored music information in the base station from the second format to the first format, which is valid for the portable terminal; and

transmitting the converted music information of the first format from the base station to the portable terminal.

355. A machine readable medium for use in a system having a processor and being composed of a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a predetermined format in association with the main capability, and a base station that supports the portable terminal, the medium containing program instructions executable by the processor for causing the system to perform a method comprising the steps of:

receiving identification information in the base station from the portable terminal for identifying the predetermined format valid in the portable terminal;

creating the music information of the predetermined format in the base station according to the received identification information; and

transmitting the created music information of the predetermined format from the base station to the portable terminal.

356. A machine readable medium for use in a base station having a processor for supporting a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a first format in association with the main capability, the medium containing program instructions executable by the processor for causing the base station to perform a method comprising the steps of:

operating an information source for storing music information of a second format, which is invalid for the portable terminal;

converting the stored music information from the second format to the first format, which is valid for the portable terminal; and

transmitting the converted music information of the first format to the portable terminal.

357. A machine readable medium for use in a base station having a processor for supporting a portable terminal having a main capability of transmitting and receiving various information and a sub capability of generating a music tone represented by music information of a predetermined format in association with the main capability, the medium containing program instructions

executable by the processor for causing the base station to perform a method comprising the steps of:

receiving identification information from the portable terminal for identifying the predetermined format valid in the portable terminal;

creating the music information of the predetermined format according to the received identification information; and

transmitting the created music information of the predetermined format to the portable terminal.

358. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

connecting a removable compact memory medium, which stores music information;

retrieving the music information from the connected removable compact memory medium; and

processing the retrieved music information for generating the music tone.

359. A machine readable medium for use in a portable terminal apparatus having a processor to provide a first capability of transmitting and receiving various information, and a second capability of generating a sequence of music tones represented by music information in association with the first capability, the medium containing program instructions executable by the processor for causing the portable terminal apparatus to perform a method comprising the steps of:

processing the music information for the generating of the music tones;

connecting a removable compact memory medium; and

writing the processed music information into the connected removable compact memory for storage of the processed music information.

360. A machine readable medium for use in a system having a processor and being comprised of a portable terminal having a first capability of transmitting and receiving various information and a second capability of generating a music tone represented by the music information in association with the first capability, and a base station that supports the portable terminal, the medium containing program instructions executable by the processor for

causing the system to perform a method comprising the steps of:

operating an information source in the base station for storing music information;

transmitting the stored music information in the form of streaming data from the base station to the portable terminal;

receiving the streaming data by the portable terminal apparatus; and

reproducing the music tone by the portable terminal apparatus in real time according to the received streaming data.

361. A machine readable medium for use in a base station having a processor for supporting a portable terminal having a first capability of transmitting and receiving various information and a second capability of generating a music tone represented by the music information in association with the first capability, the medium containing program instructions executable by the processor for causing the base station to perform a method comprising the steps of:

operating an information source for storing music information; and

transmitting the stored music information in the form of streaming data to the portable terminal, so that the

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